



FW: LDR discussion on In Trench Treatment

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to:

Chang, Albert (ECY)

06/22/2011 11:31 AM

Cc:

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Thom is with Rules and Policy and his number is 360-407-6755. Please contact him about the WAC 173-140 and your interpretation.

I spoke with Melinda Brown on the Attachment A you provided me today. This is a Mitigated Determination of Non Significance (under SEPA) which is a disclosure/evaluation process (no significant adverse impact and no

EIS), NOT an Ecology authorization for any type of treatment or treatment in a trench. It describes what permit conditions will do to authorize the USD OE to perform macro-encapsulation and immobilization of the identified material (difficult to handle mixed waste forms such as the large boxes, long-length equipment, pumps, valves and cylinders;

massive waste forms). This evaluation was specific for this debris waste forms where their configuration precludes size reduction. Because Trench 31 and 34 need final permit conditions to allow authorization for all DW management of waste, and which our SEPA determination tries to explain, these might be the in trench treatment conditions that Deborah is including. That

said, I don't see that the dangerous waste rules provide any distinction between difficult-to-manage waste forms such as large boxes, pumps, valves, etc. and drummed waste. Ecology lacks regulatory authority to authorize in trench treatment.

As you know, LDR regulations under WAC 173-303-140 and EPA 40 CFR Part 268 incorporated by reference into this regulation prohibits land disposal prior to satisfaction of applicable LDR treatment standards into a mixed waste disposal trench. A treatability variance CANNOT authorize placement in a land disposal (Low Level Burial ground) unit prior to satisfaction of applicable LDR treatment standards. To do so is not legal under our authorized DW program and WAC 173-303-140 (6) for case by case exemptions states that the Dept will deny any petition when exemption would result in a violation of applicable state laws. The May 16th LDR Variance Request from USDOE is for waste drums (not massive waste forms) with cemented waste designating for cadmium, chromium and lead, 3 characteristic metals. In a January 12th email from EPA to Deborah on this same issue/same waste stream, Dave pointed out that the waste would not designate as TCLP waste and so not subject to LDR treatment requirements.

Excerpt Dave writes: I'm also curious about the assumed designation of these wastes. The assumption of a total concentration of 100 ppm for the four metals for which the wastes are presumed to designate appears

to be an arbitrary assumption. No discussion or consideration of the concentrations of an extract of these wastes via a TCLP extraction. Remember, the designation of wastes for the toxicity characteristic is

based on a waste extract, not total concentrations. Since the TCLP extraction procedure uses an extraction fluid twenty times the quantity of the waste sample, the maximum concentration of a particular constituent in the waste extract would be 1/20th of the concentration of the constituent in the waste. This 1/20th bounding concentration assumes that all of each constituent fully leaches from the waste, an assumption that may or may not apply to the wastes in question (likely

not). Below I've summarized the assumed waste concentration for cadmium, chromium, lead and silver, the corresponding maximum extract concentration, and the TC regulatory limit:

Constituent	Max. Waste Concentration	Max. Extract
Concentration	TC Regulatory Limit	
Lead (D008)	100 ppm	5.0 mg/l
		5.0 mg/l

Cadmium (D006)	100 ppm	5.0 mg/l
		1.0 mg/l
Chromium (D007)	100 ppm	5.0 mg/l
		5.0 mg/l
Silver (D011)	100 ppm	5.0 mg/l
		5.0 mg/l

From this table, it is essentially impossible for lead, chromium, or silver to be present at or above the TC regulatory limit - for an exceedance to occur, the waste constituent would have to be exactly at the assumed maximum, and fully leach from the waste. If the assumptions are conservative as claimed, the waste would not designation as TCLP waste, and thus not even be subject to LDR treatment requirements.

We know that this cemented mixed waste (MW) has been managed at Hanford since the 1980s (23 years) and retrieved from the burial ground in 2008 (currently sitting in Central Waste Complex). It is classified as remote-handled mixed low-level waste. There are 42-cemented drums. The letter request gives a detailed description of the waste packaging using

neutralization, cans within cans placed in secondary steel cans enclosed within lead cylinders loaded into galvanized 55-gallon drums. Each drum contains 3 gallons of neutralized and cemented dissolver solution for a total of 126 gallons of cemented mixed low level waste. The description of the waste stabilization is good.

This variance should not be asking Ecology to authorize in-trench treatment of cemented MLLW for characteristic metals, instead the variance should be asking Ecology to agree that these waste drums have been treated enough for land disposal and can (the drums) go to the burial grounds in their present form meeting LDR for land disposal. That is a proposal that can be achievable for us and EPA oversight. This will be my recommendation to Jane and EPA.

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